Amendments to the Claims:

1. (original)   An apparatus for performing motion compensation when decoding an incoming video bit stream including a plurality of frames having first macroblocks encoded using block-matching motion compensation and second macroblocks encoded using global motion compensation, the apparatus comprising:

an interpolation unit for performing interpolation operations on each macroblock contained in each frame of the incoming video stream;

wherein when processing a current macroblock,

if the current macroblock is encoded using global motion compensation, the interpolation unit performs the interpolation operations according to a global motion vector on a per-macroblock basis.

2. (original)   The apparatus of claim 1, further comprising a translation unit for converting global motion parameters associated with a current frame of the incoming video stream into the global motion vector for use by the interpolation unit.

3. (original)   The apparatus of claim 2, wherein when processing the current macroblock, if the current macroblock is encoded using block-matching motion compensation, the interpolation unit performs the interpolation operations according to at least one macroblock motion vector contained in the current macroblock.

4. (original)   The apparatus of claim 3, further comprising:

a block-matching motion vector storage unit for storing the macroblock motion vector extracted from each macroblock encoded using block-matching motion compensation;

5   a global motion vector storage unit for storing the global motion vector output by the translation unit; and

a multiplexer for selecting whether the interpolation unit uses the macroblock motion vector or the global motion vector;

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wherein when performing the interpolation operations on macroblocks encoded using block-matching motion compensation, the multiplexer outputs the macroblock motion vector stored in the macroblock motion vector storage unit to the interpolation unit, and when performing the interpolation operations on

15   macroblocks encoded using global motion compensation, the multiplexer outputs the global motion vector stored in the global motion vector storage unit to the interpolation unit.

5. (original)   The apparatus of claim 1, wherein the interpolation operations comprise

20   luminance and chrominance interpolation operations.

6. (original)   The apparatus of claim 5, wherein when performing the luminance interpolation operations on macroblocks encoded using block-matching motion compensation, the interpolation unit uses half-pel precision.

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7. (original)   The apparatus of claim 5, wherein when performing the chrominance interpolation operations on macroblocks encoded using block-matching motion compensation, the interpolation unit uses half-pel precision.

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8. (original)   The apparatus of claim 5, wherein when performing the luminance interpolation operations on macroblocks encoded using global motion compensation, the interpolation unit uses half-pel precision.

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9. (currently amended)   The apparatus of claim 5, wherein when performing the chrominance interpolation operations on macroblocks encoded using global ~~matching~~ <u>motion</u> compensation, the interpolation unit uses quarter-pel precision.

10   10. (original)   The apparatus of claim 1, wherein the video decoder is capable of processing an incoming MPEG-4 video stream.

11. (currently amended) The apparatus of claim 10, wherein the video decoder is <u>for</u> ~~capable of~~ processing <u>only</u> an incoming MPEG-4 video stream having a

15   no_of_sprite_warping_point parameter set to either 0 or 1.

12. (original)   The apparatus of claim 1, wherein when performing the interpolation operations, the interpolation unit uses a bilinear interpolation process.

20   13. (original)   A method of processing an incoming video bit stream comprising a plurality of frames, the plurality of frames including first macroblocks encoded using block-matching motion compensation and second macroblocks encoded using global motion compensation, the video bit stream including macroblock motion vectors indicating motion vectors of the first macroblocks and global motion

25   parameters associated with the plurality of frames indicating a motion vector of each pixel in the second macroblocks, the method comprising:

          if a current macroblock is encoded using global motion compensation,

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performing the interpolation operations according to a global motion vector which is derived from the video bit stream and is in a form substantially identical to that of the macroblock motion vector.

5   14. (original)   The method of claim 13, further comprising converting global motion parameters associated with a current frame of the incoming video stream into the global motion vector.

15. (original)   The method of claim 13, further comprising if the current macroblock is

10   encoded using block-matching motion compensation, performing the interpolation operations according to a macroblock motion vector contained in the current macroblock.

16. (original)   The method of claim 13, wherein the interpolation operations comprise

15   luminance and chrominance interpolation operations.

17. (original)   The method of claim 16, wherein when performing the luminance interpolation operations on macroblocks encoded using block-matching motion compensation, using half-pel precision.

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18. (original)   The method of claim 16, wherein when performing the chrominance interpolation operations on macroblocks encoded using block-matching motion compensation, using half-pel precision.

25   19. (original)   The method of claim 16, wherein when performing the luminance interpolation operations on macroblocks encoded using global motion compensation, using half-pel precision.

20. (currently amended) The method of claim 16, wherein when performing the

chrominance interpolation operations on macroblocks encoded using global

~~matching~~ motion compensation, using quarter-pel precision.

5   21. (original) The method of claim 13, wherein the method is capable of processing an

incoming MPEG-4 video stream.

22. (currently amended) The method of claim 13, wherein the method is for ~~capable of~~

processing only an incoming MPEG-4 video stream having a

10   no_of_sprite_warping_point parameter set to either 0 or 1.

23. (original) The method of claim 13, wherein when performing the interpolation

operations, using a bilinear interpolation process.

15   24. (original) A predicted image synthesizer in a video decoder for decoding a video bit

stream and generating a predicted image, the video bit stream including a plurality

of frames having first macroblocks encoded using block-matching compensation

and second macroblocks encoded using global motion compensation, the video bit

stream including macroblock motion vectors indicating motion vectors of the first

20   macroblocks and global motion parameters associated with the plurality of frames

indicating a motion vector of each pixel in the second macroblocks, the predicted

image synthesizer comprising:

a translation unit receiving the global motion parameters, and translating the global

25   motion parameters into a global motion vector which is in a form substantially

identical to that of the macroblock motion vector, and

a interpolation unit for receiving a decoded image which is a previously decoded

frame, receiving the global motion vector, performing interpolation operations, and generating the prediction image.

25. (original)   The predicted image synthesizer of claim 24, further comprising a
5   demultiplexer receiving the macroblock motion vectors and global motion
              parameters, and respectively outputting the macroblock motion vectors and the
              global motion parameters, the global motion parameters are sent to the translation
              unit and translated into a global motion vector which is in a form substantially
              identical to that of the macroblock motion vector, and the interpolation unit
10   selectively receiving the macroblock motion vector or the global motion vector to
              perform the interpolation operations.

26. (original)   The predicted image synthesizer of claim 25, wherein the interpolation
              unit receives the global motion vector when a current macroblock is encoded using
15   global motion compensation.

27. (original)   The predicted image synthesizer of claim 25, wherein the interpolation
              operations include a luminance interpolation operation and a chrominance
              interpolation operation, the interpolation unit uses a first resolution to perform the
20   luminance interpolation operation and uses a second resolution to perform the
              chrominance interpolation operation.

28. (original)   The predicted image synthesizer of claim 27, wherein the first resolution is
              a half-pel resolution, and the second resolution is a quarter-pel resolution.

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29. (original)   The predicted image synthesizer of claim 25, wherein the interpolation
              unit receives the macroblock motion vector when a current macroblock is encoded
              using block-matching motion compensation.

30. (original)   The predicted image synthesizer of claim 29, wherein the interpolation operations include a luminance interpolation operation and a chrominance interpolation operation, and the interpolation unit uses a half-pel resolution to perform both the luminance interpolation operation and the chrominance interpolation operation.

31. (original)   The predicted image synthesizer of claim 30, wherein when performing the interpolation operations, the interpolation unit uses a bilinear interpolation process.

32. (new) The method of claim 13, further comprising performing the interpolation operations according to the global motion vector on a per-macroblock basis when the current macroblock is encoded using global motion compensation.

33. (new) The predicted image synthesizer of claim 24, wherein the interpolation unit is further for performing the interpolation operations according to the global motion vector on a per-macroblock basis when the current macroblock is encoded using global motion compensation.

34. (new) The predicted image synthesizer of claim 24, wherein the video decoder is for processing only an incoming MPEG-4 video stream having a no_of_sprite_warping_point parameter set to either 0 or 1.